

RECEIVED

APR 17 2002

TECH CENTER 1600/2900



ENTERED

1646

 #15
 4/17/02
 W

RAW SEQUENCE LISTING

DATE: 04/10/2002

PATENT APPLICATION: US/09/582,719A

TIME: 14:05:16

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\04102002\I582719A.raw

3 <110> APPLICANT: Max-Delbruck-Centrum fur Molekulare Medizin
 5 <120> TITLE OF INVENTION: Novel Sequence Variants of the Human Beta 2-Adrenergic
 Receptor Gene and
 6 Use Thereof
 8 <130> FILE REFERENCE: 101195-2
 10 <140> CURRENT APPLICATION NUMBER: US 09/582,719A
 C--> 11 <141> CURRENT FILING DATE: 2000-08-22
 13 <150> PRIOR APPLICATION NUMBER: PCT/DE98/03818
 14 <151> PRIOR FILING DATE: 1998-12-30
 16 <150> PRIOR APPLICATION NUMBER: DE 197 58 401.2
 17 <151> PRIOR FILING DATE: 1997-12-30
 19 <160> NUMBER OF SEQ ID NOS: 23
 21 <170> SOFTWARE: PatentIn version 3.1
 23 <210> SEQ ID NO: 1
 24 <211> LENGTH: 3451
 25 <212> TYPE: DNA
 26 <213> ORGANISM: human genomic clone
 28 <220> FEATURE:
 29 <221> NAME/KEY: mutation
 30 <222> LOCATION: (1)..(3451)
 31 <223> OTHER INFORMATION: variant of the human beta2-adrenergic receptor gene with
 mutation
 32 s in positions 159, 245, 565, 934, 1120, 1221, 1541, 1568, 1633,
 33 1666, 1839, 2078, 2110, 2640, 2826
 36 <400> SEQUENCE: 1
 37 cccgggttca agagattctc ctgtctcagc ctcccagta gctgggacta caggtacgtg 60
 39 ccaccacacc tggctaattt ttgtattttt agtagagaca agagttacac catattggcc 120
 41 aggatctttt gctttctata gcttcaaat gttcttaatg ttaagacatt ctttaatactc 180
 43 tgaaccatat gaatttgcca ttttggttaag tcacagacgc cagatgggtg caatttcaca. 240
 45 tggcacaacc cgaaagatta acaaaactatc cagcagatga aaggattttt tttagtttca 300
 47 ttgggtttac tgaagaaatt gtttgaattc tcattgcac tcagttcaa cagataatga 360
 49 gtgagtgatg ccacactctc aagagttaaa acaaaaacaa caaaaaaatt aaaacaaaag 420
 51 cacacaactt tctctctctg tcccaaaaata catacttgca taccctcgct ccagataaaa 480
 53 tccaaagggg aaaactgtct tcatgcctgc aaattcctaa ggagggcacc taaagtactt 540
 55 gacagcgagt gtgctgagga aatcggcagc tgttgaagtc acctcctgtg ctcttgccaa 600
 57 atgtttgaaa gggaatacac tgggttaccg ggtgtatgtt gggaggggag cattatcagt 660
 59 gctcgggtga ggcaagttcg gagtaccag atggagacat ccgtgtctgt gtcgctctg 720
 61 atgcctccaa gccagcgtgt gtttactttc tgtgtgtgtg accatgtctt tgtgctctg 780
 63 ggtgcttctg tgttgtttc tggccgcgtt tctgtgttgg acaggggtga ctttgtgccg 840
 65 gatggettct gtgtgagagc gcgcgcgaggt gtgcagtgtg gtgagctggg aggggtgtgtc 900
 67 tcagtgtcta tggctgtggt tcggtataag tctgagcatg tctgccaggg tgtatttgtg 960
 69 cctgtatgtg cgtgcctcgg tgggcactct cgtttccttc cgaatgtggg gcagtgcggg 1020
 71 tgtgctgccc tctgccttga gacctcaagc gcgcgagggc cccagggcag gcaggtagcg 1080
 73 gccacagaag agccaaaagc tcccgggttg gctggtaagg acaccacctc cagcttttagc 1140

75 cctctggggc cagccagggg agccgggaag cagtgggtggc ccgccctcca gggagcagtt 1200

RAW SEQUENCE LISTING

DATE: 04/10/2002

PATENT APPLICATION: US/09/582,719A

TIME: 14:05:16

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\04102002\I582719A.raw

```

77 gggccccgcc cgggccagcc ccaggagaag gagggcgagg ggagggggagg gaaaggggag 1260
79 gagtgcctcg ccccttcgcg gctgccggcg tgccattggc cgaaagttcc cgtacgtcac 1320
81 ggcgagggca gttcccctaa agtcctgtgc acataacggg cagaacgcac tgcgaagcgg 1380
83 cttcttcaga gcacgggctg gaactggcag gcaccgcgag cccctagcac ccgacaagct 1440
85 gagtgtgcag gacgagtcac caccacaccc acaccacagc cgctgaatga ggcttccagg 1500
87 cgtccgctcg cggcccgagc agccccggcg tgggtccgcc tgcctgaggcg cccccagcca 1560
89 gtgcgcttac ctgccagact gcgcgccatg gggcaacccg ggaacggcag cgcttcttg 1620
91 ctggcaccca atggaagcca tgcgcgggac cacgacgtca cgcagcaaag ggacgagggtg 1680
93 tgggtggtgg gcatgggcat cgtcatgtct ctcacgtcc tggccatcgt gtttggcaat 1740
95 gtgctggtca tcacagccat tgccaagttc gagcgtctgc agacggtcac caactacttc 1800
97 atcaattcac tggcctgtgc tgatctggtc atgggcctgg cagtgggtgcc ctttggggcc 1860
99 gcccatattc ttatgaaaat gtggactttt ggcaacttct ggtgcgagtt ttggacttcc 1920
101 attgatgtgc tgtgcgtcac ggccagcatt gagaccctgt gcgtgatcgc agtggatcgc 1980
103 tactttgccca ttacttcacc ttccaagtac cagagcctgc tgaccaagaa taaggcccg 2040
105 gtgatcattc tgatggtgtg gattgtgtca ggccttacct cttcttgcc cattcagatg 2100
107 cactggtacc gggccaccca ccaggaagcc atcaactgct atgccaatga gacctgctgt 2160
109 gacttcttca cgaaccaagc ctatgccatt gcctcttcca tcgtgtcctt ctacgttccc 2220
111 ctggtgatca tggctctcgt ctactccagg gtctttcagg aggccaaaag gcagctccag 2280
113 aagattgaca aatctgaggg ccgcttccat gtccagaacc ttagccagggt ggagcaggat 2340
115 gggcgagcgg ggcattgact ccgcagatct tccaagtctt gcttgaagga gcacaaagcc 2400
117 ctcaagacgt taggcatcat catgggcact ttcacctct gctggctgcc cttcttcac 2460
119 gttaacattg tgcattgtat ccaggataac ctcatccgta aggaagtta catcctccta 2520
121 aattggatag gctatgtcaa ttctggtttc aatcccccta tctactgccg gagcccagat 2580
123 ttcaggattg ccttcaggga gcttctgtgc ctgcgcagggt cttctttgaa ggcctatggg 2640
125 aatggctact ccagcaacgg caacacaggg gagcagagtg gatatacagt ggaacaggag 2700
127 aaagaaaata aactgctgtg tgaagacctc ccaggcacgg aagactttgt gggccatcaa 2760
129 ggtactgtgc ctagcgataa cattgattca caaggaggga attgtagtac aaatgactca 2820
131 ctgctgtaaa gcagtttttc tacttttaaa gacccccccc cccccaacag aacactaaac 2880
133 agactattta acttgagggt aataaactta gaataaaatt gtaaaaattg tataagagata 2940
135 tgcagaagga agggcatcct tctgcctttt ttattttttt aagctgtaaa aagagagaaa 3000
137 acttatttga gtgattattt gttatttga cagttcagtt cctctttgca tgggaatttgt 3060
139 aagtttatgt ctaaagagct ttagtcctag aggacctgag tctgctatat ttcatgact 3120
141 tttccatgta tctacctcac tattcaagta ttaggggtaa tatattgctg ctggtaattt 3180
143 gtatctgaag gagattttcc ttcctacacc ctgggacttg aggattttga gtatctcgga 3240
145 cctttcagct gtgaacatgg actcttcccc cactcctctt atttgcacac acgggggtatt 3300
147 ttaggcaggg atttgaggag cagcttcagt tgttttcccg agcaaagggtc taaagtttac 3360
149 agtaataaaa atgtttgacc atgccttcat tgcacctgtt tgtccaaaac cccttgactg 3420
151 gagtgtgtgt gcctccccca ctggaaaccg c 3451

```

154 <210> SEQ ID NO: 2

155 <211> LENGTH: 3451

156 <212> TYPE: DNA

157 <213> ORGANISM: human genomic clone

159 <220> FEATURE:

160 <221> NAME/KEY: mutation

161 <222> LOCATION: (1)..(3451)

162 <223> OTHER INFORMATION: variant of the human beta2-adrenergic receptor gene with mutation

163 s in positions 1541, 1633, 1666

166 <400> SEQUENCE: 2

167 cccgggttca agagattctc ctgtctcagc ctcccagta gctgggacta cagggtacgtg 60

RAW SEQUENCE LISTING

DATE: 04/10/2002

PATENT APPLICATION: US/09/582,719A

TIME: 14:05:16

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\04102002\I582719A.raw

169	ccaccacacc	tggctaattt	ttgtattttt	agtagagaca	agagttacac	catattggcc	120
171	aggatctttt	gctttctata	gcttcaaaat	gttcttaatg	ttaagacatt	cttaatactc	180
173	tgaaccatat	gaatttgcca	tttttgtaag	tcacagacgc	cagatggtgg	caatttcaca	240
175	tggcacaacc	cgaaagatta	acaaactatc	cagcagatga	aaggattttt	tttagtttca	300
177	ttgggtttac	tgaagaaatt	gtttgaattc	tcattgcata	tccagttcaa	cagataatga	360
179	gtgagtgatg	ccacactctc	aagagttaaa	aacaaaacaa	caaaaaaatt	aaaacaaaag	420
181	cacacaactt	tctctctctg	tcccaaaaata	catacttgca	tacccccgct	ccagataaaa	480
183	tccaaagggg	aaaactgtct	tcatgcctgc	aaattcctaa	ggagggcacc	taaagtactt	540
185	gacagcgagt	gtgctgagga	aatcggcagc	tgttgaagtc	acctcctgtg	ctcttgccaa	600
187	atgtttgaaa	gggaatacac	tgggttacgg	ggtgtatgtt	gggaggggag	cattatcagt	660
189	gctcgggtga	ggcaagttcg	gagtaccagg	atggagacat	cctgtctctg	gtcgtctctg	720
191	atgcctccaa	gccagcgtgt	gtttactttc	tgtgtgtgtc	accatgtctt	tgtgcttctg	780
193	ggtgcttctg	tgtttgtttc	tggcgcggtt	tctgtgtttg	acaggggtga	ctttgtgccg	840
195	gatggcttct	gtgtgagagc	gcgcgcgagt	gtgcatgtcg	gtgagctggg	aggggtgtgtc	900
197	tcagtgtcta	tggctgtggg	tcgggtataag	tctgagcatg	tctgccaggg	tgtattttgtg	960
199	cctgtatgtg	cgtgcctcgg	tgggcactct	cgtttccctc	cgaatgtggg	gcagtgccgg	1020
201	tgtgctgccc	tctgccttga	gacctcaagc	cgcgccaggc	cccagggcag	gcaggtagcg	1080
203	gccacagaag	agccaaaagc	tcccgggttg	gctggttaag	acaccacctc	cagcttttagc	1140
205	cctctggggc	cagccagggt	agccgggaag	cagtgggtgg	ccgccctcca	gggagcagtt	1200
207	gggccccgcc	cgggccagcc	ccaggagaag	gagggcgagg	ggaggggagg	gaaaggggag	1260
209	gagtgcctcg	cccttcgcgc	gctgcgcgcg	tgccattggc	cgaaggttcc	cgtacgtcac	1320
211	ggcgagggca	gttccccata	agtcctgtgc	acataacggg	cagaacgcac	tgcgaagcgg	1380
213	cttcttcaga	gcacgggctg	gaactggcag	gcaccgcgag	cccctagcac	ccgacaagct	1440
215	gagtgtgcag	gacgagtccc	caccacaccc	acaccacagc	cgtgaatga	ggcttccagg	1500
217	cgtccgctcg	cggccccgag	agccccgcgc	tgggtccgcc	tgtgaggcgc	ccccagccca	1560
219	gtgcgcttac	ctgccagact	gcgcgccatg	gggcaacccg	ggaacggcag	cgccttcttg	1620
221	ctggcaccca	atagaagcca	tgcgccggac	cacgacgtca	cgcagcaaag	ggacgaggtg	1680
223	tgggtggtgg	gcattgggcat	cgtcatgtct	ctcatcgtcc	tggccatcgt	gtttggcaat	1740
225	gtgctggtca	tcacagccat	tgccaaagtc	gagcgtctgc	agacggtcac	caactacttc	1800
227	atcacttcac	tggcctgtgc	tgatctggtc	atgggcctgg	cagtgggtgc	ctttggggcc	1860
229	gcccataatt	ttatgaaaat	gtggactttt	ggcaacttct	ggtgcgagtt	ttggacttcc	1920
231	attgatgtgc	tgtgcgtcac	ggccagcatt	gagacctgt	gcgtgatcgc	agtggatcgc	1980
233	tactttgcc	ttacttcacc	tttcaagtac	cagagcctgc	tgaccaagaa	taaggccccg	2040
235	gtgatcattc	tgatggtgtg	gattgtgtca	ggccttacct	ccttcttgcc	cattcagatg	2100
237	cactggtacc	gggccaccca	ccaggaagcc	atcaactgct	atgccaatga	gacctgctgt	2160
239	gacttcttca	cgaaccaagc	ctatgccatt	gcctcttcca	tcgtgtcctt	ctacgttccc	2220
241	ctggtgatca	tgttcttcgt	ctactccagg	gtctttcagg	aggccaaaag	gcagctccag	2280
243	aagattgaca	aactctgagg	ccgcttccat	gtccagaacc	ttagccagg	ggagcaggat	2340
245	ggcgagacgc	ggcatggact	ccgcagatct	tccaagttct	gcttgaagga	gcacaaagcc	2400
247	ctcaagacgt	taggcacat	catgggcact	ttcaccctct	gctggctgcc	cttcttcate	2460
249	gttaacattg	tgcattgtgat	ccaggataac	ctcatccgta	aggaagttaa	catcctccta	2520
251	aattgatatg	gctatgtcaa	ttctggtttc	aatccccctt	tctactgccg	gagcccagat	2580
253	ttcaggattg	ccttccagg	gcttctgtgc	ctgcgcaggt	cttctttgaa	ggcctatggg	2640
255	aatggctact	ccagcaacgc	caacacaggg	gagcagagtg	gatatcacgt	ggaacaggag	2700
257	aaagaaaata	aactgctgtg	tgaagacctc	ccaggcacgg	aagactttgt	gggccatcaa	2760
259	ggtactgtgc	ctagcgataa	cattgatcca	caaggaggga	attgtagtac	aaatgactca	2820
261	ctgctgtaaa	gcagtttttc	tactttttaa	gacccccccc	cccccaacag	aacactaaac	2880
263	agactattta	acttgagggt	aataaactta	gaataaaatt	gtaaaaattg	tatagagata	2940
265	tgcagaagga	agggcatcct	tctgcctttt	ttattttttt	aagctgtaaa	aagagagaaa	3000

RAW SEQUENCE LISTING

DATE: 04/10/2002

PATENT APPLICATION: US/09/582,719A

TIME: 14:05:16

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\04102002\I582719A.raw

```

267 acttattttga gttgattattt gttattttgta cagttcagtt cctcttttgca tggaattttgt 3060
269 aagttttatgt ctaaagagct ttagtcctag aggacctgag tctgctatat ttcatgact 3120
271 tttccatgta tctacctcac tattcaagta ttaggggttaa tatattgctg ctggttaattt 3180
273 gtatctgaag gagattttcc ttctacacc cttggacttg aggattttga gtatctcgga 3240
275 cctttcagct gtgaacatgg actcttcccc cactcctctt atttgctcac acggggtatt 3300
277 ttaggcaggg atttgaggag cagcttcagt tgttttcccg agcaaaggtc taaagtttac 3360
279 agtaaataaa atgtttgacc atgccttcat tgcacctgtt tgtccaaaac cccttgactg 3420
281 gagtgtgtt gcctcccca ctggaaaccg c 3451
284 <210> SEQ ID NO: 3
285 <211> LENGTH: 3451
286 <212> TYPE: DNA
287 <213> ORGANISM: human genomic clone
289 <220> FEATURE:
290 <221> NAME/KEY: mutation
291 <222> LOCATION: (1)..(3451)
292 <223> OTHER INFORMATION: variant of the human beta2-adrenergic receptor gene with
mutatio
293 ns in positions 1541, 1633, 1666
296 <400> SEQUENCE: 3
297 cccgggttca agagattctc ctgtctcagc ctcccgagta gctgggacta caggtacgtg 60
299 ccaccacacc tggctaattt ttgtattttt agtagagaca agagttacac catattggcc 120
301 aggatctttt gctttctata gcttcaaat gttcttaatg ttaagacatt cttaatactc 180
303 tgaaccatat gaatttgcca ttttggttaag tcacagacgc cagatggtgg caatttcaca 240
305 tggcacaacc cgaaaagatta acaaactatc cagcagatga aaggattttt tttagtttca 300
307 ttgggtttac tgaagaaatt gtttgaattc tcattgcac tccagttcaa cagataatga 360
309 gtgagtgatg ccacactctc aagagttaaa aacaaaacaa caaaaaaatt aaaacaaaag 420
311 cacacaactt tctctctctg tcccaaaata catacttgca taccctcgct ccagataaaa 480
313 tccaaagggt aaaactgtct tcatgcctgc aaattcctaa ggagggcacc taaagtactt 540
315 gacagcgagt gtgctgagga aatcggcagc tgttgaagtc acctcctgtg ctcttgccaa 600
317 atgtttgaaa gggaatacac tgggttaccg ggtgtatgtt gggaggggag cattatcagt 660
319 gctcgggtga ggcaagtctg gtagtccag atggagacat ccgtgtctgt gtcgctctgg 720
321 atgcctcaa gccagcgtgt gtttactttc tgtgtgtgtc accatgtctt tgtgcttctg 780
323 ggtgcttctg tgtttgtttc tggccgcgtt tctgtgttg acaggggtga ctttgtgccc 840
325 gatggcttct gtgtgagagc gcgcgcgagt gtgcatgtcg gtgagctggg aggggtgtgtc 900
327 tcagtgtcta tggctgtggt tccgtataag tctgagcatg tctgccaggg tgtattttgtg 960
329 cctgtatgtg cgtgcctcgg tgggcaactc cgtttccttc cgaatgtggg gcagtgcagg 1020
331 tgtgctgccc tctgccttga gacctcaagc cgcgcaggcg cccagggcag gcaggtagcg 1080
333 gccacagaag agccaaaagc tcccgggttg gctggttaagg acaccacctc cagcttttagc 1140
335 cctctggggc cagccagggt agccgggaag cagtgggtgg ccgccctcca gggagcagtt 1200
337 gggccccgcc cgggccagcc ccaggagaag gagggcgagg ggaggggagg gaaaggggag 1260
339 gagtgcctcg ccccttcgcg gctgcggcg tgccattggc cgaaagtcc cgtacgtcac 1320
341 ggcgagggca gttcccctaa agtctgtgc acataacggg cagaacgcac tgcgaagcgg 1380
343 cttcttcaga gcacgggtcg gaactggcag gcaccgcag cccctagcac ccgacaagct 1440
345 gagtgtgcag gacgagtcgc caccacacc acaccacag cgtgaaatga ggcttccagg 1500
347 cgtccgctcg cggcccgag agcccccgcg tgggtccgcc cgtgaggcg cccccagcca 1560
349 gtgcgcttac ctgccagact gcgcgccatg gggcaaccgc ggaacggcag cgccttcttg 1620
351 ctggcaccga atggaagcca tgcgcgggac cagcagtcac cgcaggaaa ggacgaggtg 1680
353 tgggtggttg gcatgggcat cgtcatgtct ctcatcgtcc tggccatcgt gtttggcaat 1740
355 gtgctggtca tcacagccat tgccaagtgc gagcgtctgc agacggtcac caactacttc 1800
357 atcacttcac tggcctgtgc tgaatctggtc atgggcctgg cagtgggtgcc ctttggggcc 1860

```

RAW SEQUENCE LISTING

DATE: 04/10/2002

PATENT APPLICATION: US/09/582,719A

TIME: 14:05:16

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\04102002\I582719A.raw

```

359 gcccatattc ttatgaaaat gtggactttt ggcaacttct ggtgcgagtt ttggacttcc 1920
361 attgatgtgc tgtgcgtcac ggccagcatt gagaccctgt gcgtgatcgc agtggatcgc 1980
363 tactttgcca ttacttcacc tttcaagtac cagagcctgc tgaccaagaa taaggcccg 2040
365 gtgatcattc tgatggtgtg gattgtgtca ggccttacct ccttcttgcc cattcagatg 2100
367 cactgggtacc gggccaccca ccaggaagcc atcaactgct atgccaatga gacctgctgt 2160
369 gacttcttca cgaaccaagc ctatgccatt gcctcttcca tcgtgtcctt ctacgttccc 2220
371 ctgggtgatca tgggtcttct ctactccagg gtcttttcagg aggccaaaag gcagctccag 2280
373 aagattgaca aatctgaggg ccgcttccat gtccagaacc ttagccagggt ggagcaggat 2340
375 gggcgagcgg ggcattggact ccgcagatct tccaagtctt gcttgaagga gcacaaagcc 2400
377 ctcaagacgt taggcatcat catgggcact ttcacctctt gctggctgcc cttcttcac 2460
379 gttaacattg tgcattgtat ccaggataac ctcatccgta aggaagttaa catcctccta 2520
381 aattggatag gctatgtcaa ttctggtttc aatcccccta tctactgccg gagcccagat 2580
383 ttcaggattg ccttccagga gcttctgtgc ctgcgcagggt cttctttgaa ggcctatggg 2640
385 aatggctact ccagcaacgg caacacaggg gagcagagtg gatatacgt ggaacaggag 2700
387 aaagaaaata aactgctgtg tgaagacctc ccaggcacgg aagactttgt gggccatcaa 2760
389 ggtactgtgc ctatgcgataa cattgattca caagggagga attgtagtac aaatgactca 2820
391 ctgctgtaaa gcagtttttc tacttttaaa gacccccccc cccccaacag aacactaaac 2880
393 agactattta acttgaggtt aataaactta gaataaaatt gtaaaaattg tatagagata 2940
395 tgcagaagga agggcatcct tctgcctttt ttattttttt aagctgtaaa aagagagaaa 3000
397 acttatttga gtgattattt gttatttgta cagttcagtt cctctttgca tgggaattgt 3060
399 aagtttatgt cttaaagagct ttagtcctag aggacctgag tctgctatat ttcatgact 3120
401 tttccatgta tctacctcac tattcaagta ttaggggtaa tatattgctg ctggtaattt 3180
403 gtatctgaag gagattttcc ttctacacac cttggacttg aggattttga gtatctcgga 3240
405 cttttcagct gtgaacatgg actcttcccc cactcctctt atttgctcac acgggggtatt 3300
407 ttaggcaggg atttgaggag cagcttcagt tgttttcccg agcaaaggct taaagtttac 3360
409 agtaaataaa atgtttgacc atgccttcat tgcacctgtt tgtccaaaac cccttgactg 3420
411 gagtgtgtgt gcctcccca ctggaaaccg c 3451

```

414 <210> SEQ ID NO: 4

415 <211> LENGTH: 3451

416 <212> TYPE: DNA

417 <213> ORGANISM: human genomic clone

419 <220> FEATURE:

420 <221> NAME/KEY: mutation

421 <222> LOCATION: (1)..(3451)

422 <223> OTHER INFORMATION: variant of the human beta2-adrenergic receptor gene with mutation

423 s in positions 1541, 1633, 1666

426 <400> SEQUENCE: 4

```

427 cccgggttca agagattctc ctgtctcagc ctcccagta gctgggacta caggtacgtg 60
429 ccaccacacc tggctaattt ttgtattttt agtagagaca agagttacac catattggcc 120
431 aggatctttt gctttctata gcttcaaaat gttcttaatg ttaagacatt cttaatactc 180
433 tgaaccatat gaatttgcca ttttggttaag tcacagacgc cagatgggtg caatttcaca 240
435 tggcacaacc cgaaagatta acaaactatc cagcagatga aaggattttt ttagttttca 300
437 ttgggtttac tgaagaaatt gtttgaattc tcattgcac tccagttcaa cagataatga 360
439 gtgagtgatg ccacactctc aagagttaaa acaaaaacaa caaaaaaatt aaaacaaaag 420
441 cacacaactt tctctctctg tcccaaaata catacttgca taccctcgct ccagataaaa 480
443 tccaaagggt aaaactgtct tcatgcctgc aaattcctaa ggagggcacc taaagtactt 540
445 gacagcgagt gtgctgagga aatcggcagc tgttgaagtc acctcctgtg ctcttgccaa 600
447 atgtttgaaa ggggaatacac tgggttaccg ggtgtatgtt gggaggggag cattatcagt 660
449 gtcgggttga ggcaagttcg gagtaccag atggagacat ccgtgtctgt gtcgctctgg 720

```

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/582,719A

DATE: 04/10/2002

TIME: 14:05:17

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\04102002\I582719A.raw

L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:937 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:8
L:952 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:9
L:967 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:10
L:982 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:11
L:997 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:12
L:1012 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:13
L:1027 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:14
L:1042 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:15
L:1057 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:16
L:1072 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:17
L:1087 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:18
L:1102 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:19
L:1117 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:20
L:1132 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:21
L:1147 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:22
L:1162 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:23